T-05-1 – "Avian & Herpetofaunal Surveys – LSU 1"

Abstract: Decline of amphibians, reptiles, and numerous Neotropical migrant birds has been attributed to habitat destruction and alteration, which warrants examination of these groups in managed forests and their association with habitat characteristics at multiple spatial scales. Avifauna and herpetofauna communities [were surveyed] in Louisiana during 2003-2004. Study areas included Sherburne Wildlife Management Area (WMA), a bottomland hardwood forest under uneven-aged management; Ben's Creek WMA, an even-aged, short-rotation loblolly pine forest; and Sandy Hollow WMA, a longleaf pine-savannah maintained with prescribed fire. Field techniques included…avian point counts, drift fence arrays (PFFT), cover boards, visual encounters, anuran calls (ACS), and microhabitat sampling. Landscape variables [were derived] with GIS land cover maps and ArcView GIS 3.3.

General trends included the following: PFFT and ACS accounted for the greatest percentage of detections among herpetofauna surveys, and results primarily reflect these efforts. Anuran calling surveys made a substantial contribution to total number of species detected. Species of conservation concern were among detections of both early- and late-successional bird[s]. At Sherburne [WMA], abundance and richness of amphibians and occurrence of late-successional birds were greater in uncut and individual-selection stands, whereas occurrence of early-successional birds was greater in recent selection cutting within groups. Abundance of reptiles did not differ across stand type. At Ben's Creek [WMA], abundance and richness of anurans was greater in 1-year and 11-23-year stands, whereas abundance and richness of lizards was similar across stand ages. Late-successional bird species occurred with greater frequency in 11-23-year stands at Ben's Creek [WMA], whereas frequency of occurrence of early-successional bird species was greater in 1-year and 4-5-year stands. At Sandy Hollow [WMA], abundance of reptiles was greater than amphibians, and occurrence of avifauna was similar to pine-savannah ecosystems elsewhere. Responses to habitat factors at all scales were species-specific. In general, canopy closure and shrub cover were the most frequent predictors of occurrence of herpetofauna and breeding bird species at the microhabitat scale. At the landscape scale, canopy closure and streamside management zones were important predictors of occurrence at Ben's Creek [WMA], whereas openings and shape complexity of longleaf pine and longleaf pine savannah were frequent predictors of occurrence…at Sandy Hollow [WMA]. Effects of selection cutting and stand age appear to benefit certain species, [but] are potentially costly for other species. Efforts to combine management of timber with conservation of amphibians, reptiles, and songbirds must [consider] the complexity of habitat requirements of species… and the landscape context in which these requirements occur.

(**Abstract paraphrased from**: "Project Summary", *Final Report (19 August 2002-25 August 2005)—Associations of Avian and Herpetofauna Communities with Forest Management at Multiple Spatial Scales;* Chamberlain, M.J., and H.G. LeGrand; LSU Agricultural Center, Baton Rouge, LA; 44 pp.)

This grant was closed 30 June 2005. **For more information** about State Wildlife Grant T-5, or to obtain copies of interim or final reports, please contact the State Wildlife Grant Coordinator, LDWF Fur & Refuge Division.